

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A substrate (1), ~~especially~~ which may be a glass substrate, coated with at least one dielectric thin-film layer deposited by sputtering, ~~especially~~ which may be magnetically enhanced sputtering ~~and preferably~~ or reactive sputtering in the presence of oxygen and/or nitrogen, with exposure to at least one ion beam [(3)] coming from an ion source [(4)], ~~characterized in that~~ wherein said dielectric layer exposed to the ion beam is crystallized.

Claim 2 (Currently Amended): The substrate [(1)] as claimed in claim 1, ~~characterized in that~~ wherein said dielectric layer deposited on the substrate by sputtering with exposure to the ion beam has a very low roughness.

Claim 3 (Currently Amended): The substrate [(1)] as claimed in claim 2, ~~characterized in that~~ wherein the dielectric layer exposed to the ion beam has a roughness at least 20 % less than that of the same dielectric layer not exposed to the ion beam.

Claim 4 (Currently Amended): The substrate [(1)] as claimed in ~~any one of the preceding claims,~~ claim 1, ~~characterized in that~~ wherein said dielectric layer is ~~made of~~ comprises a metal oxide or silicon oxide, ~~whether~~ which may be stoichiometric or nonstoichiometric, or ~~made of~~ comprises a metal nitride or oxynitride or silicon nitride or oxynitride.

Claim 5 (Currently Amended): The substrate [(1)] as claimed in ~~any one of the preceding claims,~~ claim 1, ~~characterized in that~~ wherein said dielectric layer is ~~made of~~

comprises an oxide of at least one element ~~taken~~ selected from the group consisting of silicon, zinc, tantalum, titanium, tin, aluminum, zirconium, niobium, indium, cerium, and tungsten.

Claim 6 (Currently Amended): The substrate ~~[[1]]~~ as claimed in claim 5, ~~characterized in that~~ wherein the layer ~~is made of~~ comprises zinc oxide and has a refractive index of less than or equal to 1.95, ~~especially of 1.35 to 1.95.~~

Claim 7 (Currently Amended): The substrate ~~[[1]]~~ as claimed in claim 5, wherein ~~or~~ ~~6, characterized in that~~ the layer ~~is made of~~ comprises zinc oxide and has a degree of crystallinity of greater than 90 ~~and especially greater than 95 %.~~

Claim 8 (Currently Amended): The substrate ~~[[1]]~~ as claimed in ~~any one of claims 1 to 4, characterized in that~~ claim 1, wherein said dielectric layer ~~is made of~~ comprises silicon nitride or oxynitride.

Claim 9 (Currently Amended): The substrate ~~[[1]]~~ as claimed in ~~any one of the preceding claims, characterized in that~~ claim 1, wherein said layer has an argon content of around 0.2 to 0.6 at%.

Claim 10 (Currently Amended): The substrate ~~[[1]]~~ as claimed in ~~any one of the preceding claims, characterized in that~~ claim 1, wherein said layer has an iron content of less than or equal to 3 at%.

Claim 11 (Currently Amended): The substrate $[(1)]$ as claimed in ~~any one of the preceding claims, characterized in that it~~ claim 1, wherein said substrate is coated with a multilayer in which a silver layer is placed on top of said dielectric layer exposed to the ion beam.

Claim 12 (Currently Amended): The substrate $[(1)]$ as claimed in claim 11, ~~characterized in that~~ wherein another dielectric layer is placed on top of the silver layer.

Claim 13 (Currently Amended): The substrate $[(1)]$ as claimed in claim 11, wherein ~~or 12, characterized in that~~ the multilayer includes at least two silver layers.

Claim 14 (Currently Amended): The substrate $[(1)]$ as claimed in ~~any one of claims 11 to 13, characterized in that it~~ claim 11, wherein said substrate has a surface resistance R_{\square} of less than $6 \Omega / \square$, ~~or even less than $2.1 \Omega / \square$, especially around $1.9 \Omega / \square$.~~

Claim 15 (Currently Amended): A glazing assembly ~~and especially~~ which may be a double-glazing or laminated glazing assembly, comprising at least one substrate $[(1)]$ as claimed in ~~any one of the preceding claims~~ claim 1.

Claim 16 (Currently Amended): A process for deposition on a substrate $[(1)]$, in which at least one dielectric thin-film layer is deposited on the substrate by sputtering, especially which may be magnetically enhanced sputtering ~~and preferably~~ or reactive sputtering in the presence of oxygen and/or nitrogen, in a sputtering chamber $[(2)]$, with exposure to at least one ion beam $[(3)]$ coming from an ion source $[(4)]$, ~~characterized in~~

~~that~~ wherein an ion beam is created in the sputtering chamber and in that said dielectric layer exposed to the ion beam undergoes a crystallization step.

Claim 17 (Currently Amended): The process as claimed in claim 16, ~~characterized in that~~ wherein an oxygen ion beam is created.

Claim 18 (Currently Amended): The process as claimed in claim 16, ~~wherein or 17, characterized in that~~ an ion beam is created with an energy of between 200 and 2000 eV, ~~or even between 500 and 5000 eV.~~

Claim 19 (Currently Amended): The process as claimed in ~~any one of claims 16 to 18, characterized in that~~ claim 16, wherein said dielectric layer deposited on the substrate by sputtering with exposure to the ion beam has a very low roughness.

Claim 20 (Currently Amended): The process as claimed in ~~any one of claims 16 to 19, characterized in that~~ claim 16, wherein exposure to an ion beam takes place simultaneously with the deposition of the layer by sputtering.

Claim 21 (Currently Amended): The process as claimed in ~~any one of claims 16 to 20, characterized in that~~ claim 16, wherein exposure to an ion beam takes place sequentially after the layer has been deposited by sputtering.

Claim 22 (Currently Amended): The process as claimed in ~~any one of claims 16 to 21, characterized in that~~ claim 16, wherein an ion beam is directed onto the substrate $[(1)]$, especially which may be along a direction making a nonzero angle with the surface of the

substrate, ~~preferably~~ or along a direction making an angle of 10 to 80° with the surface of the substrate.

Claim 23 (Currently Amended): The process as claimed in ~~any one of claims 16 to 22, characterized in that~~ claim 16, wherein an ion beam is directed onto at least one cathode, ~~especially which may be~~ along a direction making a nonzero angle with the surface of the cathode, preferably or along a direction making an angle of 10 to 80° with the surface of this cathode.

Claim 24 (Currently Amended): The process as claimed in ~~one of claims 16 to 23, characterized in that~~ claim 16, wherein the ion beam is created from a linear source.

Claim 25 (Currently Amended): The process as claimed in ~~any one of claims 16 to 24, characterized in that~~ claim 16, wherein at least one functional layer, ~~especially which may be~~ one based on silver, is deposited on said dielectric layer and in that said functional layer undergoes a crystallization step.

Claim 26 (Currently Amended): The process as claimed in claim 25, ~~characterized in that~~ wherein the at least one functional layer is based on silver and the size of the crystallites of the silver layer is increased by around 30 to 40%.

Claim 27 (Currently Amended): The process as claimed in ~~any one of claims 16 to 26, characterized in that~~ claim 16, wherein the dielectric layer is based on zinc oxide.

Claim 28 (Currently Amended): The process as claimed in ~~any one of claims 16 to 27, characterized in that~~ claim 16, wherein an ion beam $[(3)]$ is created in the sputtering chamber $[(2)]$ from a linear ion source $[(4)]$ simultaneously with the deposition of the layer by sputtering and in that the deposited layer then undergoes an additional treatment with at least one other ion beam.

Claim 29 (Currently Amended): An installation $[(10)]$ for deposition on a substrate $[(1)]$, ~~especially which may be~~ a glass substrate, for the manufacture of the substrate as claimed in ~~any one of claims 1 to 14 or for the implementation of the process as claimed in any one of claims 16 to 28~~ claim 1, which includes a sputtering chamber $[(2)]$ in which at least one dielectric thin-film layer is deposited on the substrate by sputtering, ~~especially which may be~~ magnetically enhanced sputtering ~~and preferably or~~ reactive sputtering in the presence of oxygen and/or nitrogen, with exposure to at least one ion beam $[(3)]$, ~~characterized in that it~~ wherein the installation includes, in the sputtering chamber $[(2)]$ at least one linear ion source $[(4)]$ capable of creating at least one ion beam.

Claim 30 (Currently Amended): The installation $[(10)]$ as claimed in ~~the preceding claim, characterized in that~~ claim 29, wherein a linear ion source is placed so as to direct an ion beam onto the substrate, ~~especially which may be~~ along a direction making a nonzero angle, ~~preferably or~~ an angle of 10 to 80°, with the surface of the substrate.

Claim 31 (Currently Amended): The installation $[(10)]$ as claimed in claim 29, ~~wherein or 30, characterized in that~~ a linear ion source is placed so as to direct an ion beam onto at least one cathode, ~~especially which may be~~ along a direction making a nonzero angle, ~~preferably or an angle~~ of 10 to 80°, with the surface of this cathode.